

**FEEL YOUR BEST AND LIVE YOUR BEST LIFE!**

# HEALTHY HEART HEALTHY BONES

How a little-known nutrient may be the missing link to a healthier you

**STRONGER  
BONES  
(AND  
TEETH!)**

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# HEALTHY HEART HEALTHY BONES

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## Introduction

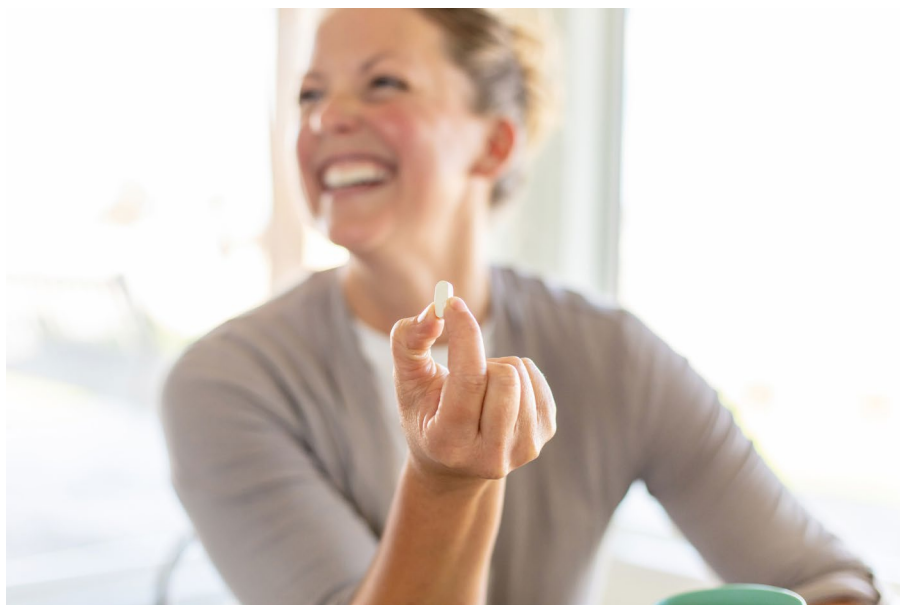
# Vitamin K2

## The essential nutrient you've never heard of

**Y**ou know your body needs an alphabet soup's worth of nutrients for good health, especially vitamins A, C, D, E, and the full array of Bs. But there's another important vitamin you're likely missing—and it's one you may not even have on your radar.

Vitamin K2 is a powerful nutrient that plays a role in several key aspects of maintaining good health. Yet, even though it's critical for strong bones, better cognition, a healthy heart, and more, a whopping 97 percent of people living in the Western world are deficient! One reason for this widespread deficiency is a lack of awareness. Unlike vitamin D or calcium, vitamin K2 hasn't gotten a lot of press in mainstream media. What's more, most multivitamins don't include this important nutrient in their formulations. And unlike its cousin K1, vitamin K2 is near impossible to get through food alone.

So how can you make sure you're getting all of the health benefits vitamin K2 provides? You can start by turning the page to discover why vitamin K2 is so critical for optimal health and how low levels may play a role in the development of several chronic diseases. You'll also learn how to maximize all the benefits K2 has to offer for better health from head to toe.



## Chapter One

# Got K2?

Before its discovery in the late 1920s, no one had ever heard of vitamin K, let alone vitamin K2. Yet it's a crucial nutrient for some of the most important systems in the human body, including your bones, your brain, your blood sugar, and your entire cardiovascular system. Vitamin K2 is so important that, according to findings from the Netherlands' famous Rotterdam Study, people with higher intakes have a 26 percent lower rate of dying from any cause. But what exactly is this mysterious nutrient—and how can you ensure you're getting all your body needs? Let's take a deeper dive into all the ways this unique, yet essential, vitamin can improve your health, starting today!

## What Is Vitamin K?

Vitamin K is an umbrella term for two important fat-soluble nutrients—vitamin K1 and vitamin K2. The first reports of vitamin K appeared in a 1929 German scientific journal, where it was dubbed *koagulationvitamin* (and later simply vitamin K1) because of its role in blood clotting. About the same time, dentist Weston Price also became aware of vitamin K as he traveled the world studying how diet influenced health and disease. He found that the diets of many non-industrialized populations contained a then unidentified nutrient that seemed to provide protection against tooth decay and chronic disease. That nutrient was vitamin K2.

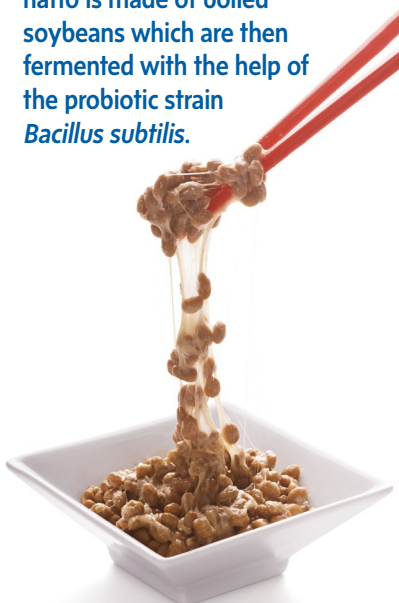
The two main forms of vitamin K—K1 and K2—play very different roles in the body.

**Vitamin K1**, or phyloquinone, is vital for healthy blood clotting and it's mainly found in green, leafy vegetables. K1 makes up 75 to 90 percent of the vitamin K obtained through diet. That said, it's difficult to get enough K1 from food alone since absorption is low. This means that, even if you eat large amounts of leafy greens you may not absorb enough vitamin K1 to experience its benefits.

**Vitamin K2**, or menaquinone, not only plays a role in blood clotting, it also regulates

## The Samurai's Secret

It's said that ancient Samurai soldiers credited their strength and fortitude on the battlefield to a fermented soybean delicacy called natto, which is extremely rich in vitamin K2. Still popular in traditional Japanese cuisine, natto is made of boiled soybeans which are then fermented with the help of the probiotic strain *Bacillus subtilis*.



cell growth, helps control calcium metabolism, manages vitamin D, helps maintain healthy blood sugar levels, supports bone, brain, and heart health, and more. It's found naturally in a few animal-based and fermented foods, and can also be synthesized by the beneficial bacteria in your gut. There are as many as nine different types of vitamin K2, and the two most researched subtypes are MK-4 and MK-7. One of the primary differences between these two subtypes is that MK-4 has a shorter half-life than MK-7. This means you would need to take multiple doses of MK-4 throughout the day as it doesn't last as long as MK-7 in the body. What's more, according to a 2019 review, the body absorbs 10 times more vitamin K-2 in the form of MK-7.

## Signs Your Vitamin K Levels Are Low

Although anyone can experience low vitamin K levels, certain populations are at particular risk. These include people with chronic conditions like celiac disease or other conditions that affect nutrient absorption, cancer or dialysis patients, and those taking statin drugs. You may also be at risk of a deficiency if you've taken many or long-term rounds of antibiotics.

You might need more vitamin K if:

- You want strong teeth and great oral health
- You're concerned about the strength of your bones
- Your body is still growing/developing (infant to teenager)
- You bruise easily
- Wounds and injuries take longer to heal
- You have frequent nosebleeds
- You have heavy menstrual periods
- You've been diagnosed with osteopenia or osteoporosis
- You've been diagnosed with calcium deposits in your arteries

If you suspect you're deficient in vitamin K, talk with your healthcare provider about adding a vitamin K2 supplement to your daily routine.



# The Best Food Sources of K1 and K2

Although the following foods do contain vitamin K, be aware that the K1 in many of these foods is not easily absorbed and many K2-rich foods aren't a regular part of most people's diets. Therefore, for optimal vitamin K support, it's best to take a comprehensive supplement.

*The amounts below are measured based on 100 grams (g) of food.*

Foods High in Vitamin K1	Amount (mcg)	Foods High in Vitamin K2	Amount (mcg)
Raw Swiss chard	830.0	Natto	939.0
Cooked collard greens	623.2	Soft cheese	506.0
Cooked mustard greens	592.7	Blue cheese	440.0
Cooked spinach	540.7	Goose liver	369.0
Cooked turnip greens	518.9	Hard cheese	282.0
Cooked beet greens	484.0	Beef liver	106.0
Cooked kale	418.5	Pepperoni	41.7
Endives	231.0	Full fat cow's milk	38.1
Chives	212.7	Turkey sausage	36.6
Cooked Brussels sprouts	193.5	Chicken	35.7



## Chapter Two

# Stronger Bones and Teeth

**A**lthough many people think of the skeleton as an unchanging structure, bones are living, growing tissues. Bone consists of a strong, flexible mesh of collagen fibers (proteins that form a soft framework) and calcium phosphate (a mineral that hardens that framework). Throughout a person's lifetime, healthy new bone is added to the skeleton and old bone is removed in a process known as remodeling.

During infancy and childhood, new bone is added faster than old bone is removed. As a result, bones become larger, stronger, and more dense. Peak bone mass tends to occur between the ages of 35 and 40. After this, however, the bones lose increasing amounts of protein and minerals—more than they can build up. Over time, bones become thin and porous. When bones turn porous enough, they become vulnerable to fractures, even under the normal stresses of everyday living. In an attempt to slow this process, many doctors recommend taking calcium and vitamin D. But, as you'll discover, these two nutrients are worthless—and potentially harmful—without vitamin K2.

## Bone Loss Basics

Bone loss and the risk of osteoporosis can affect both men and women. However, women—especially post-menopausal women—are at the greatest risk of developing this debilitating disease. Marked by hip fractures and the distinctive “dowager’s hump,” the statistics for osteoporosis are truly astounding. According to the National Osteoporosis Foundation, osteoporosis threatens an estimated 44 million Americans—including 55 percent of people over the age of 50.

Once bone loss starts in a woman, she can lose one-half to one percent of her bone mass each year. After menopause, the rate of bone loss is even greater because of the abrupt drop in estrogen and progesterone. During the decade after menopause, it's estimated that women lose up to three percent each year. As a result, many women will develop small fractures in their spines, causing pain and a shrinkage in height.

Men also start to lose bone mass around age 40 (about three to five percent per decade). However, men have approximately 30 percent more bone mass than women, thanks largely to the male hormone testosterone. As a result, their bones remain thicker and stronger far longer than those of women. This translates into considerably more osteoporosis-related fractures in women than in men. In fact, after menopause, bone loss in women accelerates so quickly that an average woman in her 70s has lost half her bone mass while a man of the same age suffers a loss of only 14 percent.

Over time, low calcium and vitamin D levels can contribute to age-related bone loss and increase the risk of osteoporosis and bone fracture. But what you may not know is that a lack of vitamin K2 can also increase your risk.





## Building Better Bones

Healthy bone remodeling involves two types of bone cells. Osteoblasts create new bone cells, while osteoclasts are responsible for removing old cells from the skeleton. This delicately balanced process is carefully regulated by many of the hormones and nutrients in your body, such as estrogen, progesterone, calcium, and vitamin D3. Where does vitamin K2 fit in? This fat-soluble vitamin acts like a traffic cop, activating important proteins that direct calcium into your bones, where it makes them stronger and less prone to fractures. But K2's bone-building benefits don't stop there. When paired with vitamin D3, K2 also helps support healthy bone mass and bone mineral density!

Matrix Gla protein (MGP) is another vitamin K2-dependent protein that is synthesized in your bones. Studies have shown that this protein is a crucial part of maintaining strong and healthy new bones. At the same time, the MGP in K2 prevents

## • VITAMINS D3 + K2: • A Dynamic Duo

• Vitamin D3 has gained a  
• well-earned reputation as  
• a bone-building nutrient  
• because of its ability to  
• improve the absorption of  
• calcium. But without K2, the  
• calcium you take may not  
• end up in your bones where  
• it's needed. Instead, it may  
• wind up in your arteries  
• or other places it doesn't  
• belong. K2 makes sure that  
• calcium is directed specifically  
• to your bones and teeth  
• (instead of to soft tissue) and  
• vitamin D3 ensures that the  
• calcium is then absorbed. The  
• result is stronger bones, a  
• reduced risk of fracture, and  
• healthier teeth.

calcium from ending up in places it doesn't belong like your arteries, joints, kidneys, bladder, and even your brain.

One study review that recently appeared in the journal *BioMed Research International* found that, because of these actions, vitamin K2 supports an increase in both bone strength and bone mineral density by enhancing the formation of new bone cells. Other studies have found that women who routinely consume higher dietary levels of vitamin K2 have a significantly lower risk of hip fracture.

Vitamin K2 may also help those already experiencing bone loss. This was shown in a 2016 randomized, clinical trial involving 148 postmenopausal women with osteopenia, a precursor to osteoporosis. Although all of the women participating in the study, which was published in the *European Journal of Endocrinology*, supplemented with calcium and vitamin D, only half of the participants were also given a vitamin K2 (MK-7) supplement. After 12 months, the researchers found that those in the K2 group didn't experience any changes in their tibia (shinbone). However, those who only took the calcium and vitamin D supplements showed an increase in porous bone. Another study published in the journal *Osteoporosis International* found that vitamin K2 supplements helped post-menopausal women maintain healthy bones. The women in this study took the supplement for three years and saw less age-related bone deterioration and spinal collapse. Together these findings suggest that supplementing with vitamin K2 may help to prevent age-related bone deterioration, particularly in women.

## Stronger, Healthier Teeth

Like your bones, your teeth don't just need calcium and vitamin D3. They also need K2. Here's why:

- K2 has been shown to create dentin—the calcified part of the tooth that lies beneath the enamel—by activating osteocalcin.
- K2 protects against cavities by changing the chemical makeup of saliva. This, in turn, creates a hostile environment for the bacteria that promotes dental cavities and gum disease.
- K2 helps to remineralize your teeth. As you age, your teeth lose their mineral density. This leaves them vulnerable to cavities and tooth loss. K2 moves calcium into your teeth, strengthening them from the inside out and helping to prevent decay.

Paired with regular brushing and flossing, vitamin K2 can help keep your teeth and gums healthy for a lifetime. And that's definitely something to smile about!



## Chapter Three

# The Cardiovascular Connection

**D**espite advances in medicine, cardiovascular disease remains the No. 1 killer in America. In fact, it's responsible for an astounding one-third of all deaths. Genetics play a significant role in the development of cardiovascular disease. An early heart attack in a parent doubles the risk of heart attack in men and boosts it by 70 percent in women. Your risk also doubles if your brother or sister has a history of heart disease. But genetics don't always determine your destiny. Your diet, supplement usage, and daily habits play a huge role in your odds of developing cardiovascular disease or suffering a heart attack or stroke.

## Are You Heart (And Calcium) Smart?

Your heart is the hardest-working organ in your body. It's the centerpiece of your cardiovascular system and it's vital to your overall health. Thanks to its pumping action, a healthy heart constantly circulates blood throughout the body, carrying oxygen and nutrients to your organs and tissues via a series of arteries. When everything's working correctly, the heart is like a high-performance machine.

Yet a number of things can undermine your cardiovascular system. One of the most common is atherosclerosis—the buildup of plaque along the inner walls of arteries that narrows and stiffens them, eventually reducing or even blocking blood flow. And, according to recent research, the accumulation of calcium in arteries is one of the first steps toward developing this artery-damaging condition.

Calcium is a critical mineral for healthy electrical activity and pumping function of the heart. It enters cells in the heart every time your heart beats, causing the heart to contract. This pushes blood out of the heart and into the arteries. Without calcium, your heart would stop beating. Problems occur when excess calcium ends up being deposited into your arteries and soft tissue instead of going to your heart or bones where it's needed. Known as coronary artery calcification (CAC), this calcium can then harden, causing your arteries to become stiff and narrow—a condition called atherosclerosis.



**People with a high intake of vitamin K2 have a 57 percent lower risk of dying from heart disease.**

## K2 for Healthy Arteries

K2 to the rescue! Studies have linked low levels of this critical vitamin with CAC in older individuals. One investigation, known as the Rotterdam Study, followed more than 4,800 people, aged 55 and older, for a decade. The researchers found that those suffering from severe aortic calcification consumed considerably less vitamin K2 compared to those with mild to moderate CAC.

Vitamin K2 plays a key role in preventing coronary artery calcification by activating MGP. This protective protein works by preventing the accumulation of calcium in arteries and veins. It's so effective that research published in the journal *Integrative Medicine* noted that increasing vitamin K2 levels can effectively reduce CAC and arterial stiffness. According to research, supplementing with

vitamin K2 (as MK-7) has been shown to kick-start MGP and effectively reduce the odds that calcium will be deposited in arteries.

Vitamin K supplementation slowed arterial calcification during one trial of almost 400 elderly people. In another clinical trial of 500 postmenopausal women, K2 improved the elasticity of blood vessels.

A 2017 trial involving kidney transplant patients that appeared in the *Journal of the American Society of Hypertension* reported that those who were supplemented with vitamin MK-7 every day for eight weeks experienced a 55.1 percent drop in inactive MGP. They also had a 14.1 percent decrease in arterial stiffness. Another clinical trial of more than 36,000 people in the journal *Atherosclerosis* found that those with the highest levels of K2 had a significantly lower risk of one particular type of atherosclerosis called peripheral artery disease.

### Improves Heart Function

According to a 2016 review in the journal *Cureus*, researchers found a direct link between diets low in vitamin K and poor heart function. This study went so far as to conclude that too little vitamin K could negatively affect heart function just as much as smoking!

Along with arterial damage, low vitamin K2 levels can also have a negative impact on cardiac output—the amount of blood the heart pumps through the circulatory system in a minute. But one eight-week study published in the journal *Alternative Therapies in Health and Medicine* found that supplementing with K2 resulted in a 12 percent increase in cardiac output among exercisers.



## K1 & K2 BETTER TOGETHER

When it comes to blood clotting, vitamin K1 tends to get all the credit. But

the truth is, both K1 and K2 are essential for producing prothrombin, a protein that plays a crucial role in healthy blood clotting. However, if you are taking a blood-thinning medication like warfarin, be aware that it may adversely interact with both forms of vitamin K. Talk with your healthcare provider about the safest way to balance your medication with your need for vitamins K1 and K2.





## Chapter Four

# K2's Bonus Benefits

**V**itamin K2 is essential for optimal bone and heart health. But it also boasts a number of other health benefits, from your head all the way down to your toes.

### Balances Blood Sugar

According to the American Diabetes Association, 34.2 million people living in the U.S. have diabetes. And roughly 1 in 3 people suffer from pre-diabetes—a condition where blood sugar levels are higher than normal but not high enough to be classified as full-blown diabetes. Losing weight, adopting a healthy diet low in sugar and refined carbohydrates, and participating in regular exercise can help to balance your blood sugar and reduce your risk of developing this serious condition. A daily dose of vitamin K2 can also help keep your blood sugar in check.

Research suggests that vitamin K2 works on a number of fronts to support healthy blood sugar levels which help reduce the risk of developing type 2 diabetes. According to several studies, K2 does this by activating osteocalcin, which improves insulin sensitivity and the way the body metabolizes sugar. A clinical trial that evaluated 355 non-diabetic people over the course of 36 months found that

supplementing with K2 also protects pancreatic cells (the cells that secrete insulin in response to elevated blood sugar). Additionally, this same study, which appeared in the journal *Diabetes Care*, noted that K2 has a beneficial impact on diabetes-related autoimmune issues.

## Boosts Cognition

Vitamin K2 plays an important role in brain health by producing unique fats called sphingolipids that strengthen brain cell membranes. Without enough K2, brain sphingolipid levels drop and that can impair brain function. Over time, a K2 deficiency could increase the risk of neurodegenerative diseases, changes in behavior, and poor cognition. Some preliminary research suggests that a lifelong diet low in vitamin K can reduce spatial learning and even damage the hippocampus—the part of the brain that governs memory and emotion.

**New research suggests that vitamin K2 might hold promise for those with Alzheimer's.**

Fortunately, there is evidence that increasing K2 levels may reverse these unwanted changes. In a 2013 study involving more than 300 healthy seniors, high vitamin K blood levels were associated with increased verbal memory. The study was published in the journal *Neurobiology of Aging*.

New research suggests that vitamin K2 may even hold promise for those with Alzheimer's disease. Typically, these people have lower vitamin K levels, which may worsen brain damage. But a new study published in the journal *Nutrients* found some evidence that vitamin K2—and especially MK-7—may slow the progression of this brain-robbing condition. During this study, which was jointly conducted by researchers at Harvard and Pacific Northwest University, K2 not only helps to regulate how sphingolipids are processed by the brain, it also acts as a powerful antioxidant that neutralizes free radicals and reduces the premature death of brain cells. This led the researchers to conclude that vitamin K2 could play an important role in Alzheimer's prevention and treatment.

## Enhances Athletic Performance

Whether you're an Olympian or a weekend warrior, aging can impact your performance. This is because your body becomes less effective at utilizing oxygen as you age. And it happens earlier than you may think. For active adults, VO<sub>2</sub> max (the maximum rate you consume oxygen during any type of exercise that increases in intensity) starts to decline once you've hit your 30th birthday. But studies suggest that supplementing with K2 (MK-7) can slow this decline.

During one 2017 study conducted at the University of North Texas, supplementation for eight weeks resulted in a 12 percent increase in maximal cardiac output among aerobically trained athletes. And that translated to better VO<sub>2</sub> max levels. Another small study in the journal *Applied Physiology, Nutrition, and Metabolism* found that taking K2 daily for three months reduced exercise-induced muscle cramps. Together, these findings suggest that vitamin K2 improves both exercise performance and recovery in trained athletes and recreational exercise buffs alike.



## Reduces Inflammation

Research points to low-level inflammation as an underlying cause of many chronic age-related diseases, including cardiovascular disease, osteoarthritis, and yes, even Alzheimer's disease. But a 2021 study in the journal *Nutrients* that linked K2 to a lower risk of Alzheimer's also noted that the nutrient possessed strong anti-inflammatory properties. In another three-year clinical trial, published in 2019 in the *International Journal of Molecular Sciences*, K2 (as MK-7) slowed the development of cardiovascular aging, osteoarthritis, and osteoporosis by alleviating chronic inflammation. Paired with a healthy lifestyle, supplementing with K2 might reduce inflammation and support healthier aging.

## Supports Nerve Health

From tingling and numbness to jabbing, throbbing, or burning pain in your hands or feet, peripheral neuropathy can interfere with everyday movements. Often a complication of diabetes, chemotherapy, or some autoimmune disorders, it can raise the risk of falling, injury, or infection. However, K2 can improve the symptoms of neuropathy by repairing damaged nerves.

Healthy nerves need a healthy myelin sheath, which is a protective coating that surrounds nerve cells. This insulating coating also conducts electrical signals throughout the entire nervous system. But these coatings can't do their job without vitamin K2.

In one 2013 observational pilot study, 30 people with peripheral neuropathy took 200 mcg of supplemental vitamin K2 (as MK-7) twice a day for eight weeks. At the end of the study, the participants experienced a reduction in pain, numbness, tingling, fatigue, weakness, and muscle cramping. What's more, the supplement was well tolerated and safe.

**K2 can  
improve the  
symptoms  
of peripheral  
neuropathy.**

## Chapter Five

# Choosing an Effective K2

Since there are few foods that provide substantial amounts of vitamin K<sub>2</sub>, supplementation is critical. But not all K<sub>2</sub> supplements are created equal. Some contain vitamin K in the form of MK-4 and only MK-4. Others that provide MK-7 may use a synthetic form of the vitamin.

Unfortunately, manufacturers are not required to note on the label when the synthetic version is used. To get the most out of your vitamin K<sub>2</sub> supplement, look for a word or phrase on the label that states it is the natural form of K<sub>2</sub>, for example, “natural” or “made from fermentation.” Also, check the price. Artificial vitamin K<sub>2</sub> is less expensive to produce and that difference is usually reflected in the cost. Here are some important factors to consider when choosing the most effective K<sub>2</sub> for your needs.

## Bioavailability

As we discussed in Chapter One, there’s a difference between MK-4 and MK-7 when it comes to absorption and bioavailability. MK-4 has a short plasma half-life—only four to six hours at most. That means it’s quickly removed from the blood after consumption and can’t provide your body with the K<sub>2</sub> it needs.

This was shown in one small clinical trial that appeared in *Nutrition Journal*. During the 2012 study, a group of healthy young women were given either a supplement containing MK-7 or one with MK-4 after eating the exact same breakfast. They then had blood samples taken six hours later to measure their vitamin K levels. The researchers found that MK-7 was well absorbed and was





still circulating in the blood 48 hours after the supplement had been taken. On the flip side, MK-4 couldn't be detected in the participant's blood at all, even shortly after the supplement was taken. This means that MK-7 is considerably more effective than MK-4 at increasing the body's vitamin K levels.

## The Importance of Naturally Fermented K2—MK7

Grabbing any old vitamin K2 supplement from the store shelf may not provide all the benefits you need. One reason is that all of the MK-4 and half or more of MK-7 found in supplements is synthetic.

Although using a synthetic form of MK-7 is more cost effective for supplement manufacturers, it's not as well studied or held to the same quality standards as naturally fermented MK-7. But the basis for fermentation is also important, especially if soy is used. Currently 94 percent of all soy is genetically modified. What's more, soy is a common food allergen that can trigger symptoms like hives and itching in some people.

An easy way to sidestep these issues is to check the label for a natural MK-7 made from fermented chickpeas not subjected to genetic modification. Here's how it works: When *Bacillus subtilis*—a beneficial strain of spore-forming bacteria—is added to organic chickpea paste, the bacteria starts to gobble up the carbohydrates in the chickpeas. They then produce vitamin K2, which is harvested for use in K2 supplements. Available under the brand name MenaquinGold, this proprietary form of vitamin K2 is 100 percent natural and soy free. Why does this matter? Because studies show that it provides a longer half-life and better bioavailability than other forms of the nutrient. And that means more benefits for you.

Finally, it's wise to look for a pharmaceutical-grade supplement. This will ensure that your K2 is 99 percent pure and held to the highest manufacturing standards.



## Cofactors—Getting More Bang for Your Buck

Just as life is better with friends who support us, K2 is better thanks to one important cofactor—zinc. Cofactors act like helper molecules to increase a nutrient's absorption, bioavailability, and/or, efficacy. One study that appeared in the *Journal of Health Sciences* found that adding zinc to a K2 supplement (in the form of MK-7) helped to create stronger bones than when K2 was taken by itself. The researchers concluded that adding zinc to a K2 supplement was so effective that it might help prevent age-related osteoporosis.

## Safety

Whenever you take a supplement, safety matters. Studies conducted by the U.S. Pharmacopeial Convention (USP) have found that vitamin K2, in the form of MK-7, is safe for most people. That said, there are some exceptions. Before adding K2 to your supplement regimen, talk with your doctor if you are currently taking any of the following medications. These have been shown to deplete K2, inhibit its absorption, or have other adverse interactions.

- Warfarin (Coumadin)
- Statins
- Broad-spectrum antibiotics
- Bile acid sequestrants (Cholestyramine and Colestipol)
- Orlistat (a weight-loss drug that reduces absorption of fat-soluble vitamins, including vitamin K)

## Dosage

The most effective dose for vitamin K2 as MK-7 is 320 mcg, divided into two daily doses. Like other fat-soluble vitamins, you'll increase absorption even more if you take your K2 supplement with a meal that contains some fat.



## BONUS

# The truth about most K2 supplements: what they're not telling you

Natural K2 in the supplement industry is produced by adding bacteria to a food source, usually some kind of bean paste (most often, soy). The bacteria consume the food, ferment the bean paste and produce as a by-product, a high level of the natural form of menaquinone-7 vitamin K2. The vitamin K2 is then harvested off the food source and converted into the powder used as a nutritional supplement.

What's not well known in our industry is that natural K2 tends to degrade in potency very quickly. In fact, some testing has shown as much as more than 80% in just 2 months.

**MenaquinGold™** is a trademarked process developed to stabilize the potency of a natural vitamin K2, enabling the customer to get a superior vitamin K2 product.

When you see **MenaquinGold™** on a label, it means three things.

- First, that natural vitamin K2 has been tested and shown to still retain 100% potency three years post-manufacture. You can trust the product label.
- Second, it was grown on a chickpea paste and is soy-free and GMO-free.
- Third, it was clinically tested in a human trial on 26 athletes (300mcg in Month#1 and 150mcg in Month#2) and shown to increase by 12% the amount of arterial blood flowing through the heart in just 2 months.

That change is comparable to, every hour, 63 more quarts of oxygenated blood moving through your body.

See **Oral Consumption of Vitamin K2 for 8 Weeks Associated With Increased Maximal Cardiac Output During Exercise** by McFarlin, et al <https://pubmed.ncbi.nlm.nih.gov/28646812/>





## Have you heard about calcium's dirty little secret?

Everyone knows that calcium is essential for healthy bones. But studies show that, without vitamin K2, calcium can accumulate in your arteries causing all sorts of problems! Vitamin K2, in the form of MK-7, acts like a traffic cop in your body, directing calcium where it's needed (and away from the places it doesn't belong). For healthy bones and arteries, choose a daily dose of **Just Thrive® Vitamin K2-7**—the only clinically proven, pharmaceutical-grade K2 MK-7 formulated with MenaquinGold™ for guaranteed stability and maximum effectiveness.

**Got calcium? You need  
Just Thrive® Vitamin K2-7!**



For more information, visit us online at [JustThriveHealth.com](https://JustThriveHealth.com) or call us at 800.455.8939.



\* These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.